NOTICE OF REVISION (NOR)

THIS REVISION DESCRIBED BELOW HAS BEEN AUTHORIZED FOR THE DOCUMENT LISTED.

1. DATE (YYMMDD) 96-09-13

Form Approved OMB No. 0704-0188

Public reporting burden for this collection is estimated to average 2 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.
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2. PROCURING ACTIVITY NO.

3. DODAAC

4. ORIGINATOR

a. TYPED NAME *(First, Middle Initial, Last)*

b. ADDRESS *(Street, City, State, Zip Code)*
Defense Supply Center Columbus
3990 Broad Street
Columbus,OH 43216-5000

5. CAGE CODE 67268

7. CAGE CODE 67268

6. NOR NO. 5962-R220-96

8. DOCUMENT NO. **81036**

9. TITLE OF DOCUMENT

MICROCIRCUIT, MEMORY, PROGRAMMABLE LOGIC, MONOLITHIC SILICON

10. REVISION LETTER

a. CURRENT J

b. NEW K

11. ECP NO. 81036-1KSR

12. CONFIGURATION ITEM (OR SYSTEM) TO WHICH ECP APPLIES
All

13. DESCRIPTION OF REVISION

Sheet 1: **Revisions ltr column; add "K".**
Revisions description column; add "Changes in accordance with NOR 5962-R220-96".
Revisions date column; add "96-09-13".
Rev status above sheet numbers 1 and 5, delete "J" and add "K".
Revision level block; delete "J" and Add "K".

Sheet 5: **Table I, parameter; "High level output voltage", divide Device type block making two blocks, the top block will indicate devices 1-10 and the limit will remain 2.4 V min. The bottom block will indicate devices 11-14 and the limit will show 2.3 V min. This will also require dividing the Min Limit block to correspond to the division of the Device type block.**
Revision level block; change from "J" to "K".

Table I, parameter; "Supply current", divide Device type block that now indicates 11-14 into two blocks, place 11 in one block and 12-14 in the other. This will also require the division of the Min and Max Limit blocks to correspond to the two blocks above. Across from the block that indicates Device 11 for the Max Limit insert 105 and for Device 12-14 use the exisisting value of 95.

14. THIS SECTION FOR GOVERNMENT USE ONLY

a. *(X one)*		
	X	(1) Existing document supplemented by the NOR may be used in manufacture.
		(2) Revised document must be received before manufacturer may incorporate this change.
		(3) Custodian of master document shall make above revision and furnish revised document.

b. ACTIVITY AUTHORIZED TO APPROVE CHANGE FOR GOVERNMENT
DSCC-VAS

c. TYPED NAME *(First, Middle Initial, Last)*
Ray Monnin

d. TITLE
Acting Microelectronics Team Chief

e. SIGNATURE
William Johnson

f. DATE SIGNED *(YYMMDD)* 96-09-13

15a. ACTIVITY ACCOMPLISHING REVISION
DSCC-VAS

b. REVISION COMPLETED *(Signature)*
Kenneth S. Rice

c. DATE SIGNED *(YYMMDD)* 96-09-13

REVISIONS			
LTR	DESCRIPTION	DATE (YR-MO-DA)	APPROVED
J	Deleted reference to checkerboard pattern in 3.2.2.1. Deleted footnote reference to how subgroups 7 and 8 are verified in table II. Added footnote 2 to device types 11RX, 12RX, 13RX, and 14RX. Removed reference to case outline Y in 6.6, previously replaced with case outline S. Editorial changes throughout.	1989 DEC 04	M. A. FRYE

REV																									
SHEET																									
REV	J	J	J																						
SHEET	22	23	24																						

REV STATUS OF SHEETS	REV	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J
	SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	

PMIC N/A

STANDARDIZED MILITARY DRAWING

THIS DRAWING IS AVAILABLE FOR USE BY ALL DEPARTMENTS AND AGENCIES OF THE DEPARTMENT OF DEFENSE

AMSC N/A

PREPARED BY
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APPROVED BY
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DRAWING APPROVAL DATE
22 July 1982

REVISION LEVEL
J

DEFENSE ELECTRONICS SUPPLY CENTER
DAYTON, OHIO 45444

MICROCIRCUITS, MEMORY, PROGRAMMABLE LOGIC, MONOLITHIC SILICON

SIZE	CAGE CODE	
A	**67268**	**81036**

SHEET 1 OF 24

DESC FORM 193
SEP 87

5962-E1502

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

1. SCOPE

1.1 Scope. This drawing describes device requirements for class B microcircuits in accordance with 1.2.1 of MIL-STD-883, "Provisions for the use of MIL-STD-883 in conjunction with compliant non-JAN devices".

1.2 Part number. The complete part number shall be as shown in the following example:

1.2.1 Device types. The device types shall identify the circuit function as follows:

Device type	Generic number	Circuit function
01, 07, 11	PAL16L8, L8A, L8A-2	16-input 8-output AND-OR invert gate array
02, 08, 12	PAL16R8, R8A, R8A-2	16-input 8-output registered AND-OR gate array
03, 09, 13	PAL16R6, R6A, R6A-2	16-input 6-output registered AND-OR gate array
04, 10, 14	PAL16R4, R4A, R4A-2	16-input 4-output registered AND-OR gate array
05	PAL16X4	16-input 4-output registered AND-OR exclusive OR gate array
06	PAL16A4	16-input 4-output registered and-carry-or exclusive OR gate array

1.2.2 Case outlines. The case outlines shall be as designated in appendix C of MIL-M-38510, and as follows:

Outline letter	Case outline
R	D-8 (20-lead, 1.060" x.310" x.200"), dual-in-line package
S	F-9 (20-lead, .540" x .300 x .100"), flat package 1/
2	C-2 (20-terminal, .358" x .100"), square chip carrier package

1.3 Absolute maximum ratings.

Supply voltage (platinum-silicide)	-0.5 to +7.0 V dc
Supply voltage (titanium-tungsten)	-0.5 to +12.0 V dc
Input voltage range	-0.5 to +5.5 V dc
Storage temperature range	-65°C to +150°C
Lead temperature (soldering, 10 seconds)	+260°C
Thermal resistance, junction-to-case (O_{JC}) 2/	See MIL-M-38510, appendix C
Output voltage applied	-0.5 V to V_{CC} maximum dc 3/
Output sink current	100 mA
Maximum power dissipation (P_D) 4/	
Device types 01, 02, 03, 04, 05, and 06	2.0 W
Device types 07, 08, 09, and 10	1.0 W
Device types 11, 12, 13, and 14	.5 W
Maximum junction temperature (T_J)	+175°C

1/ Outline letter Y was removed along with corresponding case outline, figure 1, and replaced with outline letter S with corresponding case outline F-9.
2/ Heat sinking is recommended to reduce the junction temperature.
3/ Except during programming.
4/ Must withstand the added P_D due to short circuit test (e.g., I_{OS}).

2. APPLICABLE DOCUMENTS

1.4 Recommended operating conditions.

Supply voltage	4.5 V dc minimum to 5.5 V dc maximum
Minimum high level input voltage	2.0 V dc
Maximum low level input voltage	0.8 V dc
Case operating temperature range (T_C)	-55°C to +125°C

2. APPLICABLE DOCUMENTS

2.1 Government specification, standard, and bulletin. Unless otherwise specified, the following specification, standard, and bulletin of the issue listed in that issue of the Department of Defense Index of Specifications and Standards specified in the solicitation, form a part of this drawing to the extent specified herein.

SPECIFICATION

MILITARY

MIL-M-38510 - Microcircuits, General Specification for.

STANDARD

MILITARY

MIL-STD-883 - Test Methods and Procedures for Microelectronics.

BULLETIN

MILITARY

MIL-BUL-103 - List of Standardized Military Drawings (SMD's).

(Copies of the specification, standard, and bulletin required by manufacturers in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting activity.)

2.2 Order of precedence. In the event of a conflict between the text of this drawing and the references cited herein, the text of this drawing shall take precedence.

3. REQUIREMENTS

3.1 Item requirements. The individual item requirements shall be in accordance with 1.2.1 of MIL-STD-883, "Provisions for the use of MIL-STD-883 in conjunction with compliant non-JAN devices" and as specified herein.

3.2 Design, construction, and physical dimensions. The design, construction, and physical dimensions shall be as specified in MIL-M-38510 and herein.

3.2.1 Terminal connections. The terminal connections shall be as specified on figure 1.

3.2.2 Truth table. The truth table shall be as specified on figure 2.

3.2.2.1 Unprogrammed devices. The truth table for unprogrammed devices for contracts involving no altered item drawing shall be as specified on figure 2. When required in groups A, B, or C (see 4.3), the devices shall be programmed by the manufacturer prior to test. A minimum of 50 percent of the total number of fuses shall be programmed or to any altered item drawing pattern which includes at least 25 percent of the total number of fuses programmed.

3.2.2.2 Programmed devices. The truth table for programmed devices shall be as specified by an attached altered item drawing.

3.2.3 Logic diagram. The logic diagram for unprogrammed devices shall be as specified on figure 3.

3.2.4 Case outlines. The case outlines shall be in accordance with 1.2.2.

3.3 Electrical performance characteristics. Unless otherwise specified herein, the electrical performance characteristics are as specified in table I and apply over the full case operating temperature range.

3.4 Electrical test requirements. The electrical test requirements shall be the subgroups specified in table II. The electrical test for each subgroup are described in table I.

3.5 Marking. Marking shall be in accordance with MIL-STD-883 (see 3.1 herein). The part shall be marked with the part number listed in 1.2 herein. In addition, the manufacturer's part number may also be marked as listed in MIL- BUL-103 (see 6.6 herein). For programmed devices, the altered item drawing number shall be added to the marking by the programming activity.

3.6 Certificate of compliance. A certificate of compliance shall be required from a manufacturer in order to be listed as an approved source of supply in MIL-BUL-103 (see 6.6 herein). The certificate of compliance submitted to DESC-ECS prior to listing as an approved source of supply shall affirm that the manufacturer's product meets the requirements of MIL-STD-883 (see 3.1 herein) and the requirements herein.

3.7 Certificate of conformance. A certificate of conformance as required in MIL-STD-883 (see 3.1 herein) shall be provided with each lot of microcircuits delivered to this drawing.

3.8 Notification of change. Notification of change to DESC-ECS shall be required in accordance with MIL-STD-883 (see 3.1 herein).

3.9 Verification and review. DESC, DESC's agent, and the acquiring activity retain the option to review the manufacturer's facility and applicable required documentation. Offshore documentation shall be made available onshore at the option of the reviewer.

3.9.1 Processing options. Since the device is capable of being programmed by either the manufacturer or the user to result in a wide variety of configurations; two processing options are provided for selection in the contract, using an altered item drawing.

3.9.2 Unprogrammed device delivered to the user. All testing shall be verified through group A testing as defined in 3.2.2.1 and table II. It is recommended that users perform subgroups 7 and 9 after programming to verify the specific program configuration.

3.9.3 Manufacturer-programmed device delivered to the user. All testing requirements and quality assurance provisions herein, including the requirements of the altered item drawing, shall be satisfied by the manufacturer prior to delivery.

TABLE I. Electrical performance characteristics.

Test	Symbol	Conditions T_C = -55° C to +125° C unless otherwise specified	Device type	Group A subgroups	Limits		Unit
					Min	Max	
Input clamp voltage	V_{IC}	V_{CC} = 4.5 V, I_I = -18 mA	All	1, 2, 3		-1.5	V
High level output voltage	V_{OH}	V_{CC} = 4.5 V, V_{IL} = 0.0 V V_{IH} = 3.0 V, I_{OH} = -2 mA	All	1, 2, 3	2.4		V
Low level output voltage	V_{OL}	V_{CC} = 4.5 V, V_{IL} = 0.0 V V_{IH} = 3.0 V, I_{OL} = 12 mA	All	1, 2, 3		0.5	V
High level input voltage	V_{IH}	1/	All	1, 2, 3	2		V
Low level input voltage	V_{IL}	1/	All	1, 2, 3		0.8	V
High level input current	I_{IH}	V_{CC} = 5.5 V, V_I = 2.4 V 2/	All	1, 2, 3		40	µA
Low level input current	I_{IL}	V_{CC} = 5.5 V, V_I = 0.4 V 2/	All	1, 2, 3		-0.25	mA
Output short circuit current	I_{OS}	V_{CC} = 5.5 V, V_O = 0.5 V 3/	All	1, 2, 3	-30	-250	mA
Input Current	I_I	V_{CC} = 5.5 V, V_I = 5.5 V	All	1, 2, 3		1	mA
Off-state output current	I_{OZL}	V_{CC} = 5.5 V, V_{IL} = 0.0 V V_{IH} = 3.0 V, V_O = 0.4 V 2/	All	1, 2, 3		-100	µA
Off-state output current	I_{OZH}	V_{CC} = 5.5 V, V_{IL} = 0.0 V V_{IH} = 3.0 V, V_O = W.4 V 2/	All	1, 2, 3		100	µA
Supply current	I_{CC}	V_{CC} = 5.5 V	01 - 04, 07 - 10	1, 2, 3		185	mA
			6			225	
			6			240	
			11 - 14			95	

See footnotes at end of table.

TABLE I. Electrical performance characteristics - Continued.

Test	Symbol	Conditions T_C = -55° C to +125° C unless otherwise specified	Device type	Group A subgroups	Limits		Unit
					Min	Max	
Propagation delay data input to output	t_{PHL}	V_{CC} = 5.0 V, C_L = 50 pF ±10% R_1 = 390Ω, R_2 = 750Ω	01, 03, 04, 05, 06	9, 10, 11		45	ns
			07, 09, 10			30	
			11, 13, 14			50	
Propagation delay data input to output	t_{PLH}		01, 03, 04, 05, 06	9, 10, 11		45	ns
			07, 09, 10			30	
			11, 13, 14			50	
Propagation delay output high impedance to output high 1/	t_{PZH}		01, 03, 04, 05, 06, 11, 13, 14	9, 10, 11		45	ns
			07, 09, 10			30	
Propagation delay output high impedance to output low	t_{PZL}		01, 03, 04, 05, 06, 11, 13, 14	9, 10, 11		45	ns
			07, 09, 10			30	
Propagation delay output high to output high impedance 1/	t_{PHZ}		01, 03, 04, 05, 06, 11, 13, 14	9, 10, 11		45	ns
			07, 09, 10			30	
Propagation delay output low to output high impedance	t_{PLZ}		01, 03, 04, 05, 06, 11, 13, 14	9, 10, 11		45	ns
			07, 09, 10			30	
Propagation delay high impedance to output high (pin 11 to output enable) 1/ 4/	t_{PZH}		02, 03, 04, 05, 06, 08, 09, 10, 12, 13, 14	9, 10, 11		25	ns
Propagation delay high impedance to output low (pin 11 to output enable) 4/	t_{PZL}		02, 03, 04, 05, 06, 08, 09, 10, 12, 13, 14	9, 10, 11		25	ns

See footnotes at end of table.

TABLE I. Electrical performance characteristics - Continued.

Test	Symbol	Conditions T_C = -55°C to +125°C unless otherwise specified	Device type	Group A subgroups	Limits		Unit
					Min	Max	
Propagation delay output high to high impedance (pin 11 to output disable) 1/ 4/	t_{PHZ}	V_{CC} = 5.0 V, C_L = 50 pF ±10% R_1 = 390Ω, R_2 = 750Ω	02, 03, 04, 05, 06, 08, 09, 10, 12, 13, 14	9, 10, 11		25	ns
Propagation delay output low to high impedance (pin 11 to output disable) 4/	t_{PLZ}		02, 03, 04, 05, 06, 08, 09, 10, 12, 13, 14	9, 10, 11		25	ns
Clock pulse width	$t_{P(CL)}$		02, 03, 04, 05, 06, 12, 13, 14	9, 10, 11	25		ns
			08, 09, 10		20		
Setup time	t_{SU}		02, 03, 04	9, 10, 11	45		ns
			05, 06		55		
			08, 09, 10		30		
			12, 13, 14		50		
Hold time	t_H		02, 03, 04, 08, 09, 10, 12, 13, 14	9, 10, 11	0		ns
Maximum clock frequency 5/	f_{MAX}		02, 03, 04, 12, 13, 14	9, 10, 11	14		Mhz
			05, 06		12		
			08, 09, 10		20		

1/ Not tested directly, but guaranteed.

2/ I/O terminal leakage is the worst case of I_{IX} or I_{OZX}.

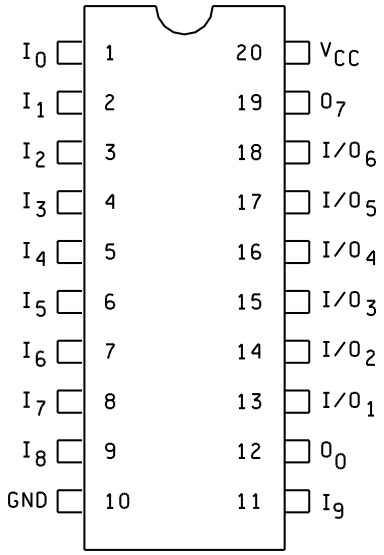
3/ Only one output shorted at a time.

4/ Test applies only to register outputs. Output disable times may be tested with C_L = 5 pF.

5/ Tested only initially and after any design or process changes.

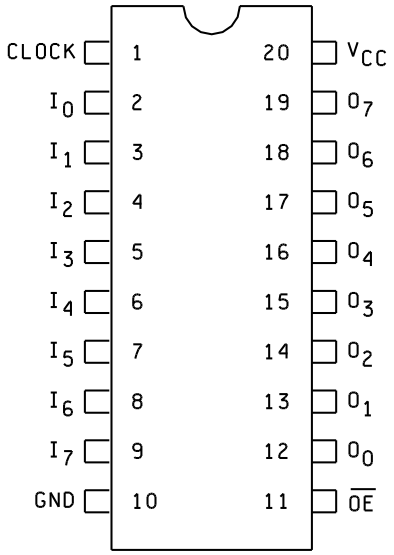
DEVICE TYPES 01,07, AND 11

CASE R AND S



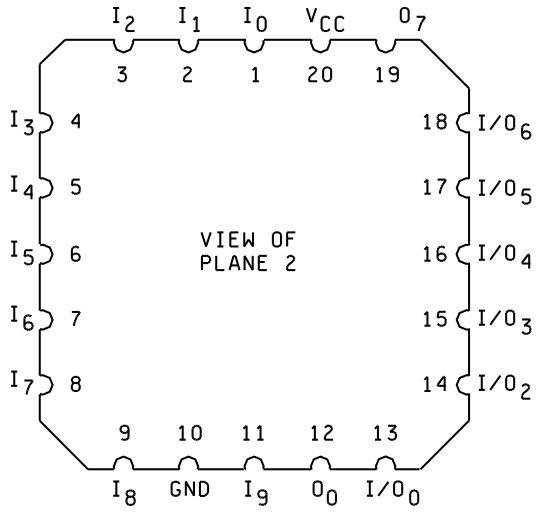
DEVICE TYPES 02,08, AND 12

CASE R AND S



DEVICE TYPES 01,07, AND 11

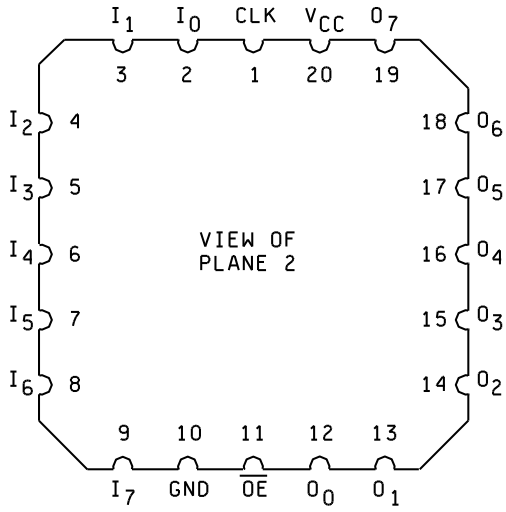
CASE 2



OPTION A WITH ACTIVE TERMINALS ON PLANE 1.

DEVICE TYPES 02,08, AND 12

CASE 2



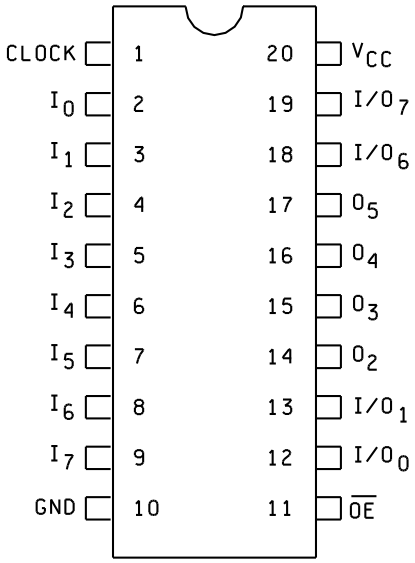
OPTION A WITH ACTIVE TERMINALS ON PLANE 1.

FIGURE 1. Terminal connections.

STANDARD MICROCIRCUIT DRAWING DEFENSE ELECTRONICS SUPPLY CENTER DAYTON, OHIO 45444	SIZE **A**		**81036**
		REVISION LEVEL J	SHEET **9**

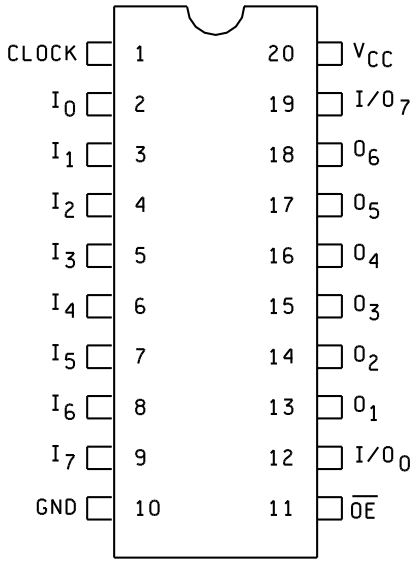
DEVICE TYPES 03,09, AND 13

CASE R AND S



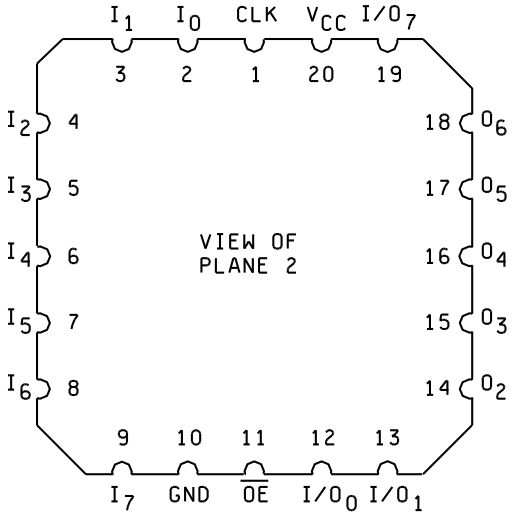
DEVICE TYPES 04,10, AND 14

CASE R AND S



DEVICE TYPES 03,09, AND 13

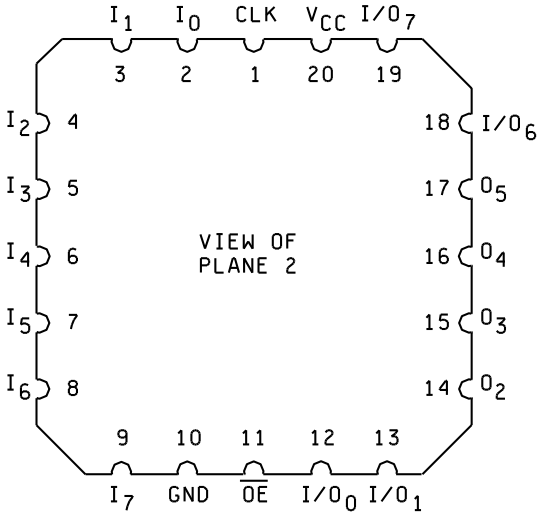
CASE 2



OPTION A WITH ACTIVE TERMINALS ON PLANE 1.

DEVICE TYPES 04,10, AND 14

CASE 2

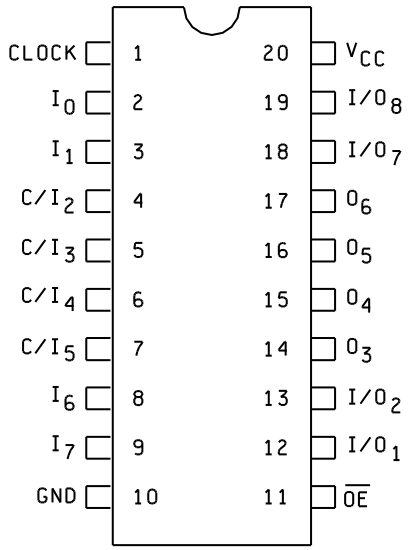


OPTION A WITH ACTIVE TERMINALS ON PLANE 1.

FIGURE 1. Terminal Connections - Continued.

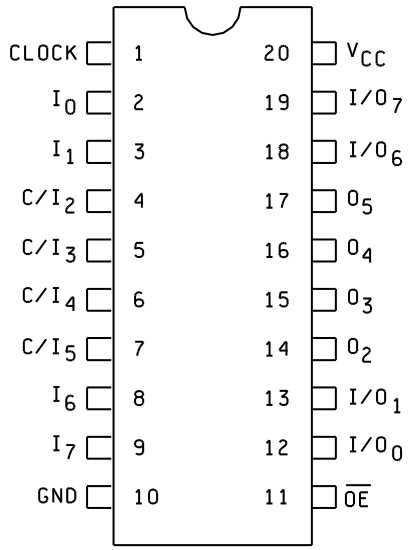
DEVICE TYPE 05

CASE R



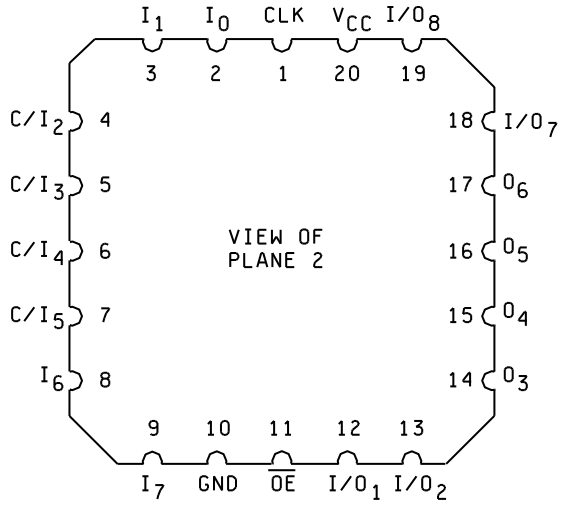
DEVICE TYPE 06

CASE R



DEVICE TYPES 05

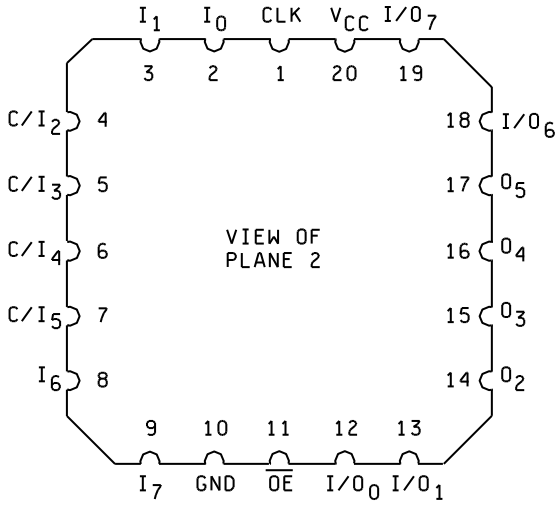
CASE 2



OPTION A WITH ACTIVE TERMINALS ON PLANE 1.

DEVICE TYPES 06

CASE 2



OPTION A WITH ACTIVE TERMINALS ON PLANE 1.

FIGURE 1. Terminal Connections - Continued.

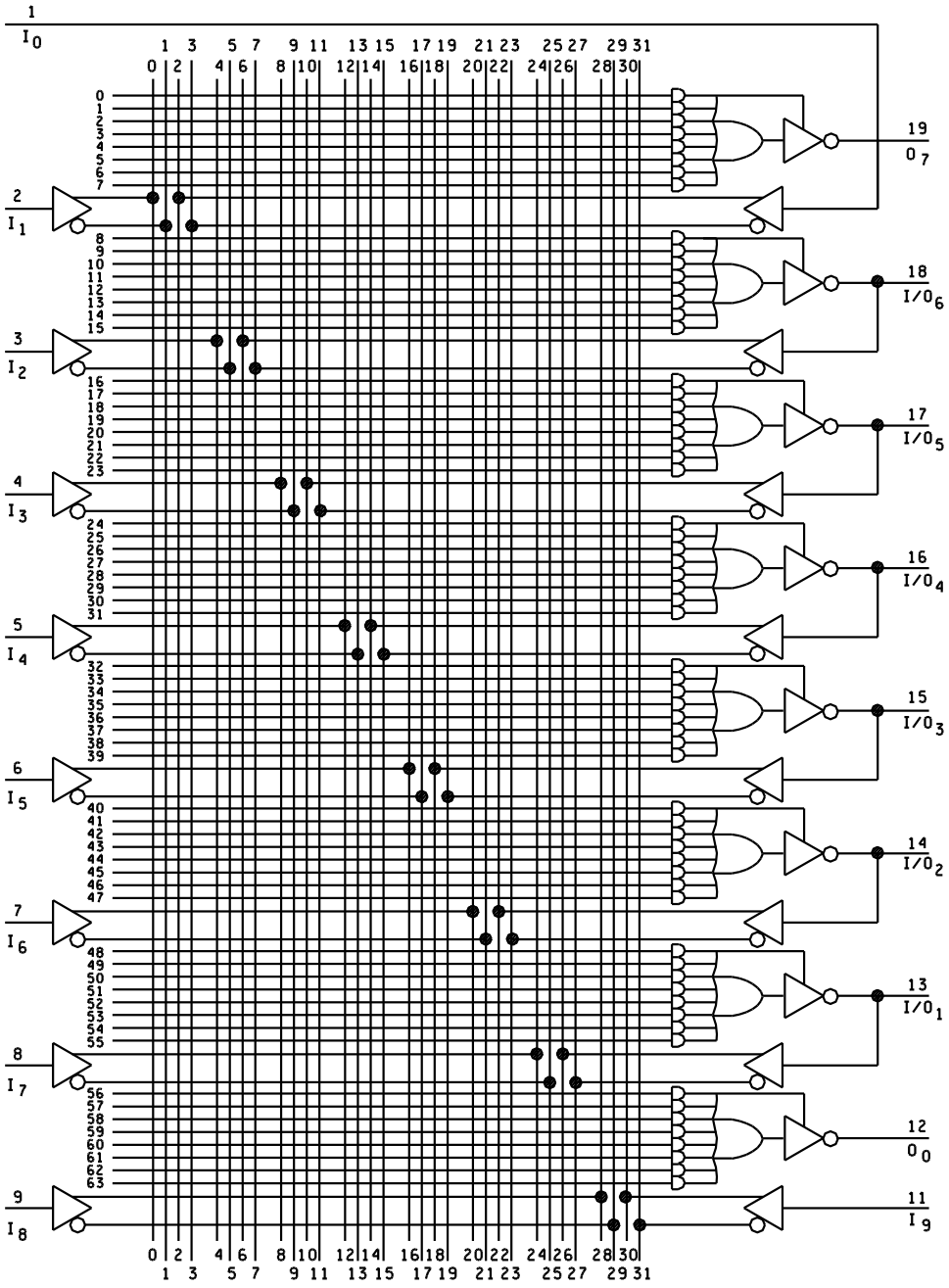
Device types 01 through 14

TRUTH TABLE																				
ADDRESS												OUTPUT LEVEL								
CLK	$\overline{OE}$	I_9	I_8	I_7	I_6	I_5	I_4	I_3	I_2	I_1	I_0	O_7	O_6	O_5	O_4	O_3	O_2	O_1	O_0	DEVICE
–	–	X	X	X	X	X	X	X	X	X	X	Z	Z	Z	Z	Z	Z	Z	Z	01,07,11
CLK	L	–	–	X	X	X	X	X	X	X	X	H	H	H	H	H	H	H	H	02,08,12
CLK	L	–	–	X	X	X	X	X	X	X	X	Z	H	H	H	H	H	H	Z	03,09,13
CLK	L	–	–	X	X	X	X	X	X	X	X	Z	Z	H	H	H	H	Z	Z	04,05,06, 10,14

NOTES:
1. Z = Tristate
2. Clock (pin 1) - low to high transition required to obtain valid data after last address transition.
3. Enable (pin 11) - must be low to enable output.

FIGURE 2. Truth table (unprogrammed).

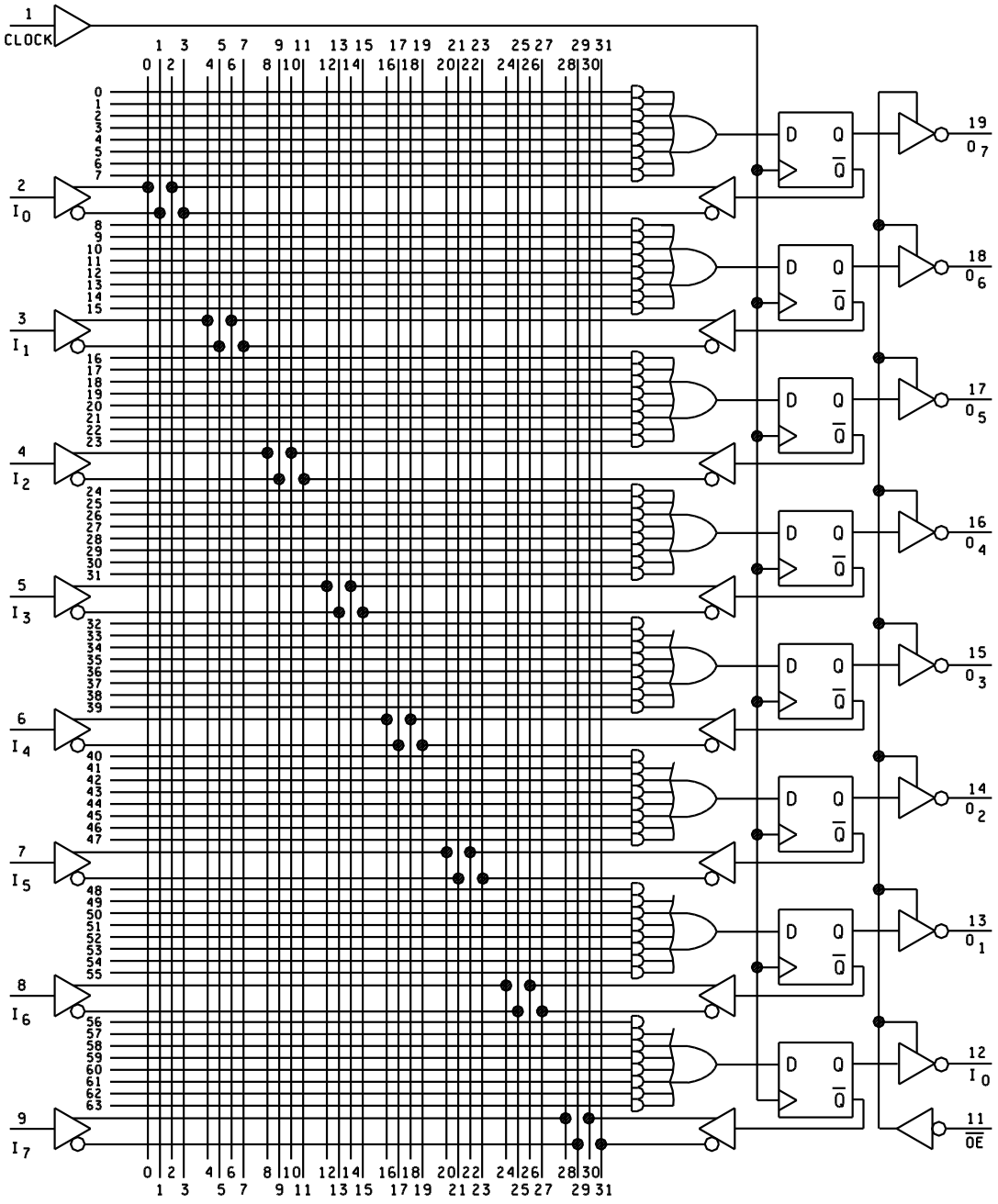
DEVICE TYPES 01,07, AND 11



NOTE: EACH INTERSECTION OF NUMBERED LINES INDICATES A FUSIBLE LINK.

FIGURE 3. Unprogrammed logic diagram.

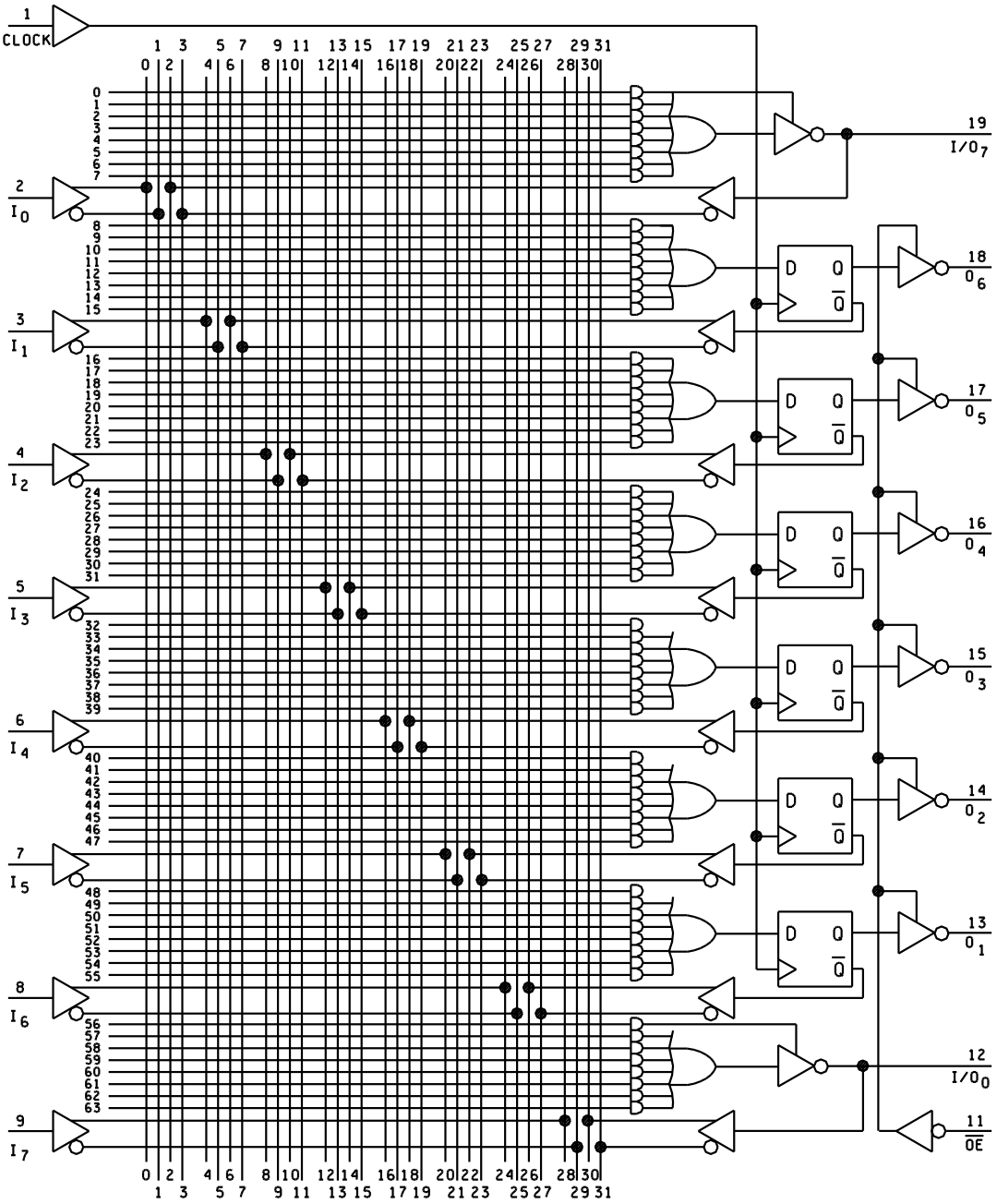
DEVICE TYPES 02,08, AND 12



NOTE: EACH INTERSECTION OF NUMBERED LINES INDICATES A FUSIBLE LINK.

FIGURE 3. Unprogrammed logic diagram - Continued.

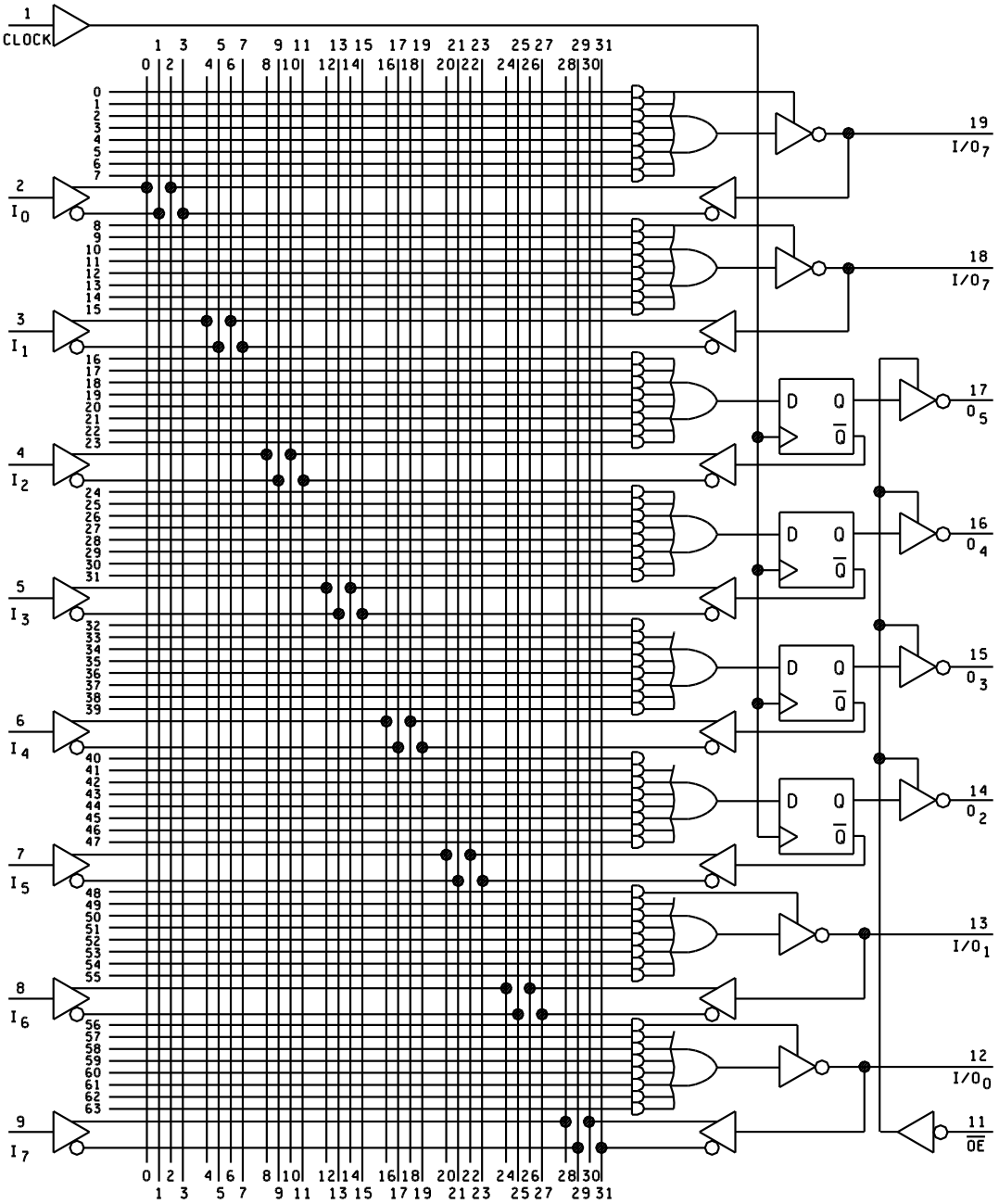
DEVICE TYPES 03,09, AND 13



NOTE: EACH INTERSECTION OF NUMBERED LINES INDICATES A FUSIBLE LINK.

FIGURE 3. Unprogrammed logic diagram - Continued.

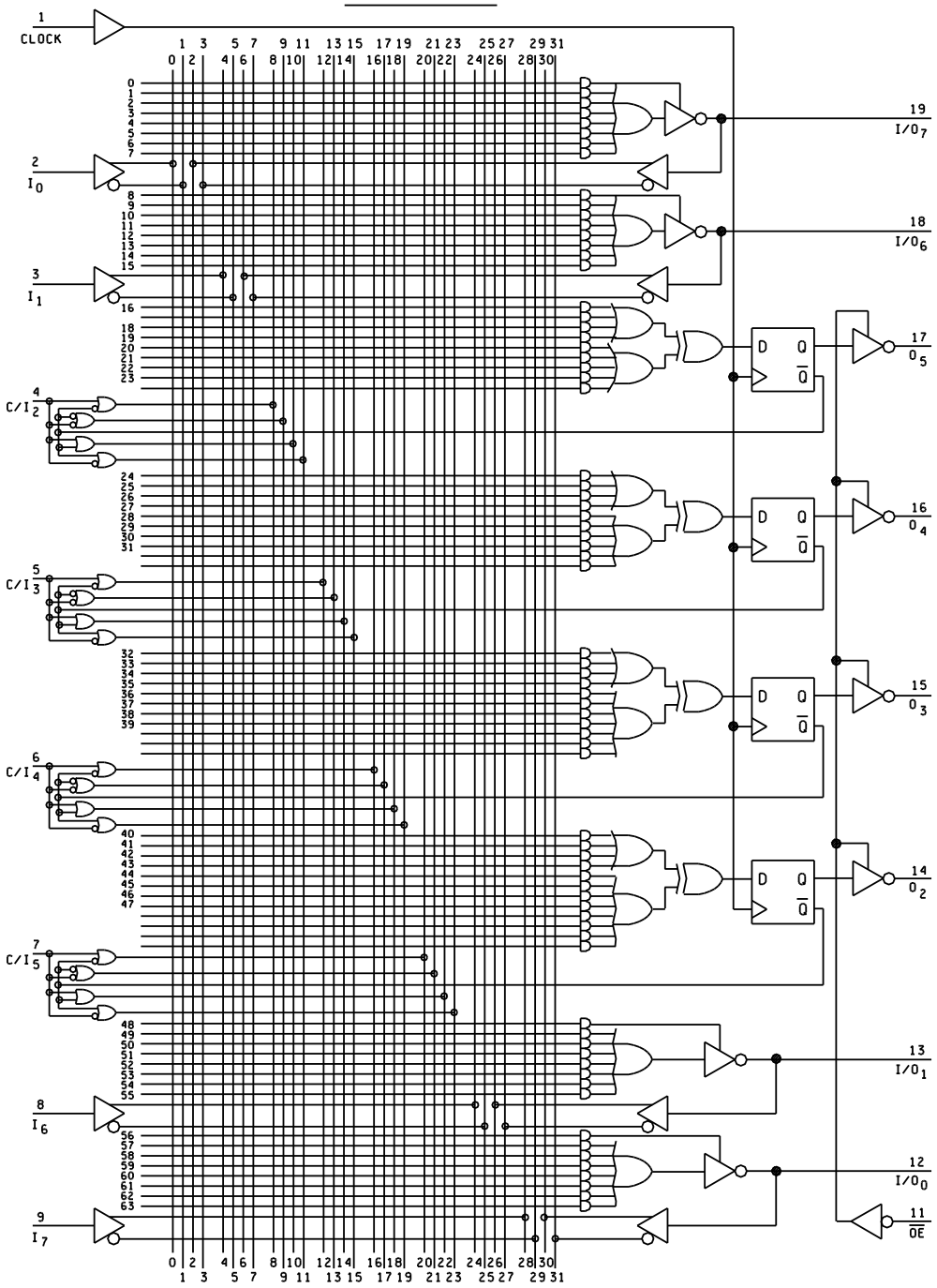
DEVICE TYPES 04,10, AND 14



NOTE: EACH INTERSECTION OF NUMBERED LINES INDICATES A FUSIBLE LINK.

FIGURE 3. Unprogrammed logic diagram - Continued.

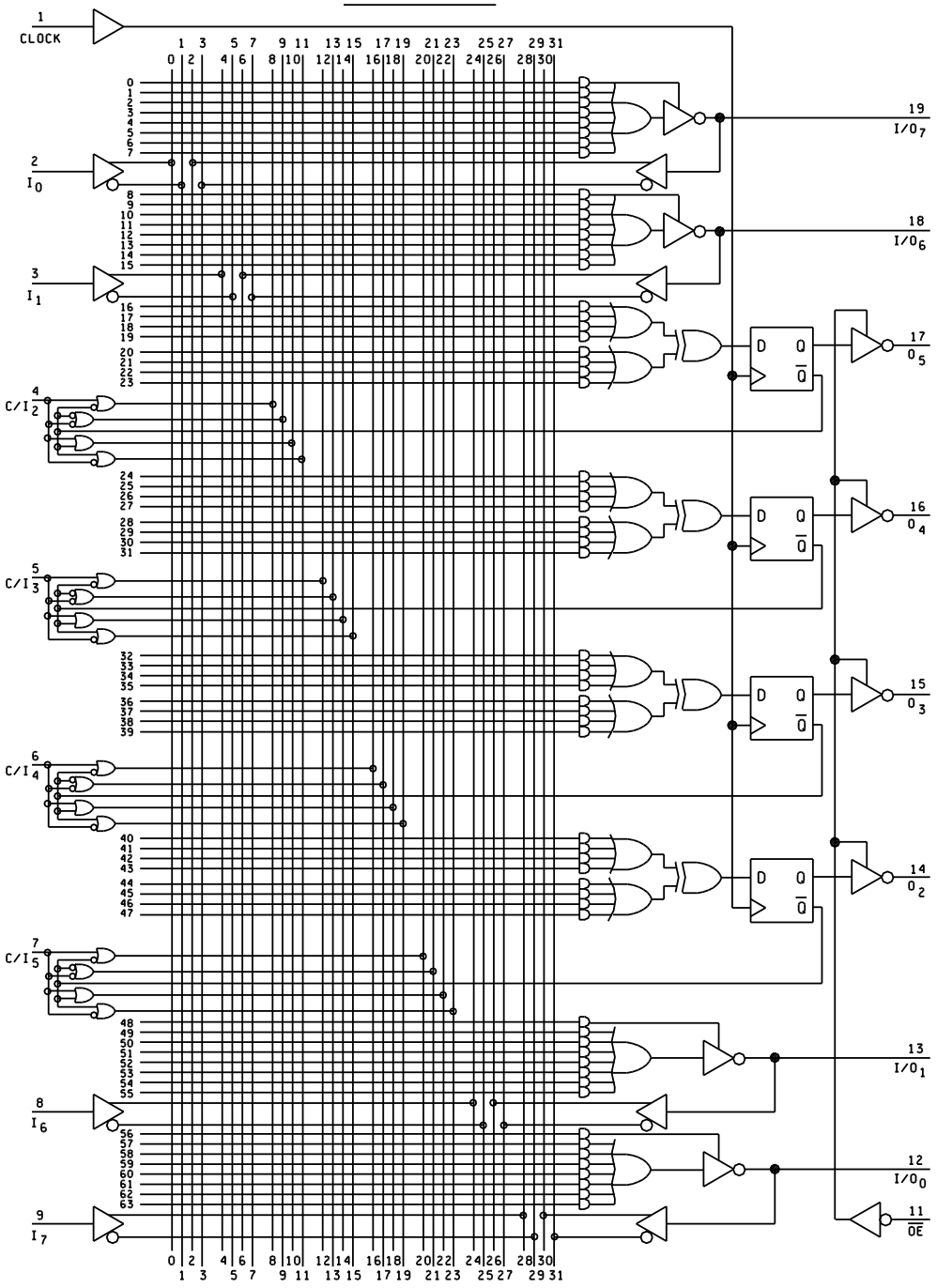
DEVICE TYPE 05



NOTE: EACH INTERSECTION OF NUMBERED LINES INDICATES A FUSIBLE LINK.

FIGURE 3. Unprogrammed logic diagram - Continued.

DEVICE TYPE 06



NOTE: EACH INTERSECTION OF NUMBERED LINES INDICATES A FUSIBLE LINK.

FIGURE 3. Unprogrammed logic diagram - Continued.

4. QUALITY ASSURANCE PROVISIONS

4.1 Sampling and inspection. Sampling and inspection procedures shall be in accordance with section 4 of MIL-M-38510 to the extent specified in MIL-STD-883 (see 3.1 herein).

4.2 Screening. Screening shall be in accordance with method 5004 of MIL-STD-883, and shall be conducted on all devices prior to quality conformance inspection. The following additional criteria shall apply:

a. Burn-in test, method 1015 of MIL-STD-883.

(1) Test condition A, B, C, or D using the circuit submitted with the certificate of compliance (see 3.6 herein).

(2) T_A = +125°C, minimum.

b. Interim and final electrical test parameters shall be as specified in table II herein, except interim electrical parameter tests prior to burn-in are optional at the discretion of the manufacturer.

4.3 Quality conformance inspection. Quality conformance inspection shall be in accordance with method 5005 of MIL-STD-883 including groups A, B, C, and D inspections. The following additional criteria shall apply.

4.3.1 Group A inspection.

a. Tests shall be as specified in table II herein.

b. Subgroups 4, 5, and 6 in table I, method 5005 of MIL-STD-883 shall be omitted.

c. Subgroups 7 and 8 shall include verification of the truth table.

d. Unprogrammed devices shall be tested for programmability and ac performance compliance to the requirements of group A, subgroup 9. Either of two techniques is acceptable:

(1) Testing the entire lot using additional built-in test circuitry which allows the manufacturer to verify programmability and ac performance without programming the user array. If this is done, the resulting test patterns shall be verified on all devices during subgroup 9, group A testing in accordance with the sampling plan specified in MIL-STD-883, method 5005.

(2) If such compliance cannot be tested on an unprogrammed device, a sample shall be selected to satisfy programmability requirements prior to performing subgroup 9. Twelve devices shall be submitted to programming (see 3.2.2.1). If more than two devices fail to program, the lot shall be rejected. At the manufacturer's option, the sample may be increased to 24 total devices with no more than four total device failures allowable.

Ten devices from the programmability sample shall be submitted to the requirements of group A, subgroup 9. If more than two total devices fail, the lot shall be rejected. At the manufacturer's option, the sample may be increased to 20 total devices with no more than four total device failures allowable.

TABLE II. Electrical test requirements. 1/ 2/ 3/

MIL-STD-883 test requirements	Subgroups (per method 5005, table I)
Interim electrical parameters (method 5004)	1
Final electrical test parameters (method 5004) for unprogrammed devices	1*, 2, 3, 7*, 8
Final electrical test parameters (method 5004) for programmed devices	1*, 2, 3, 7*, 8
Group A test requirements (method 5005)	1, 2, 3, 7, 8, 9
Groups C and D end-point electrical parameters (method 5005)	1
Additional electrical subgroups for group C periodic inspections	10, 11

1/ * Indicates PDA applies to subgroups 1 and 7.
2/ Any or all subgroups may be combined when using high-speed testers.
3/ Subgroups 10 and 11, if not tested, shall be guaranteed to the specified limits in table I.

4.3.2 Groups C and D inspections.

a. End-point electrical parameters shall be as specified in table II herein.

b. Steady-state life test conditions, method 1005 of MIL-STD-883.

(1) Test condition A, B, C, or D using the circuit submitted with the certificate of compliance (see 3.6 herein).

(2) T_A = +125°C, minimum.

(3) Test duration: 1,000 hours, except as permitted by 1005 of MIL-STD-883.

4.4 Programming procedures. The programming procedures shall be as specified by the device manufacturer.

5. PACKAGING

5.1 Packaging requirements. The requirements for packaging shall be in accordance with MIL-M-38510.

6. NOTES

6.1 Intended use. Microcircuits conforming to this drawing are intended for use when military specifications do not exist and qualified military devices that will perform the required function are not available for OEM application. When a military specification exists and the product covered by this drawing has been qualified for listing on QPL-38510, the device specified herein will be inactivated and will not be used for new design. The QPL-38510 product shall be the preferred item for all applications.

6.2 Replaceability. Replaceability is determined as follows:

a. Microcircuits covered by this drawing will replace the same generic device covered by a contractor-prepared specification or drawing.

b. When a QPL source is established, the part numbered device specified in this drawing will be replaced by the microcircuit identified as part number M38510/504XXBXX.

6.3 Configuration control of SMD's. All proposed changes to existing SMD's will be coordinated with the users of record for the individual documents. This coordination will be accomplished in accordance with MIL-STD-481 using DD Form 1693, Engineering Change Proposal (Short Form).

6.4 Record of users. Military and industrial users shall inform the Defense Electronics Supply Center when a system application requires configuration control and the applicable SMD. DESC will maintain a record of users and this list will be used for coordination and distribution of changes to the drawings. Users of drawings covering microelectronic devices (FSC 5962) should contact DESC-ECS, telephone (513) 296-6022.

6.5 Comments. Comments on this drawing should be directed to DESC-ECS, Dayton, Ohio 45444, or telephone 513-296-5375.

6.6 Approved sources of supply. Approved sources of supply are listed in MIL-BUL-103. Additional sources will be added to MIL-BUL-103 as they become available. The vendors listed in MIL-BUL-103 have agreed to this drawing and a certificate of compliance (see 3.6 herein) has been submitted to and accepted by DESC-ECS. The approved sources of supply listed below are for information purposes only and are current only to the last action of this document.

Military drawing part number	Vendor CAGE number	Vendor similar part number 1/	Replacement military specification part number
8103601RX 2/	34335 27014	AMPAL16L8/BRA PAL16L8J/883	M38510/50401BRX
81036012X	34335	AMPAL16L8/B2A	M38510/50401B2X
8103602RX 2/	34335 27014	AMPAL16R8/BRA PAL16R8J/883	M38510/50402BRX
81036022X	34335	AMPAL16R8/B2A	M38510/50402B2X
8103603RX 2/	34335 27014	AMPAL16R6/BRA PAL16R6J/883	M38510/50403BRX

See footnotes at end of listing.

Military drawing part number	Vendor CAGE number	Vendor similar part number 1/	Replacement military specification part number
81036032X	34335	AMPAL16R6/B2A	M38510/50403B2X
8103604RX 2/	34335 27014	AMPAL16R4/BRAPA L16R4J/883	M38510/50404BRX
81036042X	34335	AMPAL16R4/B2A	M38510/50404B2X
8103605RX	3/	PAL16X4MJ883B	M38510/50405BRX
81036052X	3/	PAL16X4ML883B	M38510/50405B2X
8103606RX	3/	PAL16A4MJ883B	M38510/50406BRX
81036062X	3/	PAL16A4ML883B	M38510/50406B2X
8103607RX 2/	50364 34335 01295 27014	PAL16L8AMJ/883B AMPAL16L8A/BRA PAL16L8AMJB PAL16L8AJ/883	M38510/50401BRX
81036072X	50364 34335 01295	PAL16L8AML/883B AMPAL16L8A/B2A PAL16L8AMFKB	M38510/50401B2X
8103607SX	50364 34335 01295	PAL16L8AMW/883BA MPAL16L8A/BSAPAL 16L8AMWB	
8103608RX 2/	50364 34335 01295 27014	PAL16R8AMJ/883BA MPAL16R8A/BRA PAL16R8AMJB PAL16R8AJ/883	M38510/50402BRX
81036082X	50364 34335 01295	PAL16R8AML/883BA MPAL16R8A/B2A PAL16R8AMFKB	M38510/50402B2X
8103608SX	50364 34335 01295	PAL16R8AMW/883B AMPAL16R8A/BSA PAL16R8AMWB	
8103609RX 2/	50364 34335 01295 27014	PAL16R6AMJ/883B AMPAL16R6A/BRA PAL16R6AMJB PAL16R6AJ/883	M38510/50403BRX

See footnotes at end of listing.

Military drawing part number	Vendor CAGE number	Vendor similar part number 1/	Replacement military specification part number
81036092X	50364 34335 01295	PAL16R6AML/883BA MPAL16R6A/B2A PAL16R6AMFKB	M38510/50403B2X
8103609SX	50364 34335 01295	PAL16R6AMW/883BA MPAL16R6A/BSA PAL16R6AMWB	
8103610RX 2/	50364 34335 01295 27014	PAL16R4AMJ/883B AMPAL16R4A/BRA PAL16R4AMJB PAL16R4AJ/883	M38510/50404BRX
81036102X	50364 34335 01295	PAL16R4AML/883B AMPAL16R4A/B2A PAL16R4AMFKB	M38510/50404B2X
8103610SX	50364 34335 01295	PAL16R4AMW/883B AMPAL16R4A/BSA PAL16R4AMWB	
8103611RX 2/	50364 01295 34335	PAL16L8A-2MJ/883B PAL16L8A-2MJB AMPAL16L8L/BRA	M38510/50407BRX
81036112X	50364 01295 34335	PAL16L8A-2ML/883B PAL16L8A-2MFKB AMPAL16L8L/B2A	M38510/50407B2X
8103611SX	50364 34335 01295	PAL16L8A-2MW/883B AMPAL16L8L/BSA PAL16L8A-2MWB	
8103612RX 2/	50364 01295 34335	PAL16R8A-2MJ/883B PAL16R8A-2MJB AMPAL16R8L/BRA	M38510/50408BRX
81036122X	50364 01295 34335	PAL16R8A-2ML/883B PAL16R8A-2MFKB AMPAL16R8L/B2A	M38510/50408B2X
8103612SX	50364 34335 01295	PAL16R8A-2MW/883B AMPAL16R8L/BSA PAL16R8A-2MWB	
8103613RX 2/	50364 01295 34335	PAL16R6A-2MJ/883B PAL16R6A-2MJB AMPAL16R6L/BRA	M38510/50409BRX

See footnotes at end of listing.

Military drawing part number	Vendor CAGE number	Vendor similar part number 1/	Replacement military specification part number
81036132X	50364 01295 34335	PAL16R6A-2ML/883B PAL16R6A-2MFKB AMPAL16R6L/B2A	M38510/50409B2X
8103613SX	50364 34335 01295	PAL16R6A-2MW/883B AMPAL16R6L/BSA PAL16R6A-2MWB	
8103614RX 2/	50364 01295 34335	PAL16R4A-2MJ/883B PAL16R4A-2MJB AMPAL16R4L/BRA	M38510/50410BRX
81036142X	50364 01295 34335	PAL16R4A-2ML/883B PAL16R4A-2MFKB AMPAL16R4L/B2A	M38510/50410B2X
8103614SX	50364 34335 01295	PAL16R4A-2MW/883B AMPAL16R4L/BSA PAL16R4A-2MWB	

1/ Caution. Do not use this number for item acquisition. Items acquired to this number may not satisfy the performance requirements of this drawing.
2/ Inactive for new design for the R case outline only. Use applicable QPL-38510 device.
3/ Not available from an approved source of supply.

Vendor CAGE number	Vendor name and address	Fusible link
01295	Texas Instruments, Incorporated 13500 N. Central Expressway P.O. Box 655303 Dallas, TX 75265 Point of contact: I-20 at FM 1788 Midland, TX 79711-0448	Titanium-tungsten
27014	National Semiconductor 2900 Semiconductor Drive Santa Clara, CA 95052-8090	Titanium-tungsten
34335	Advanced Micro Devices 901 Thompson Place P.O. Box 3453 Sunnyvale, CA 94088	Platinum-silicide
50364	Monolithic Memories, Incorporated A subsidiary of AMD 2175 Mission College Boulevard Santa Clara, CA 95051 Point of contact: 901 Thompson Place P.O. Box 3453 Sunnyvale, CA 94088	Titanium-tungsten